

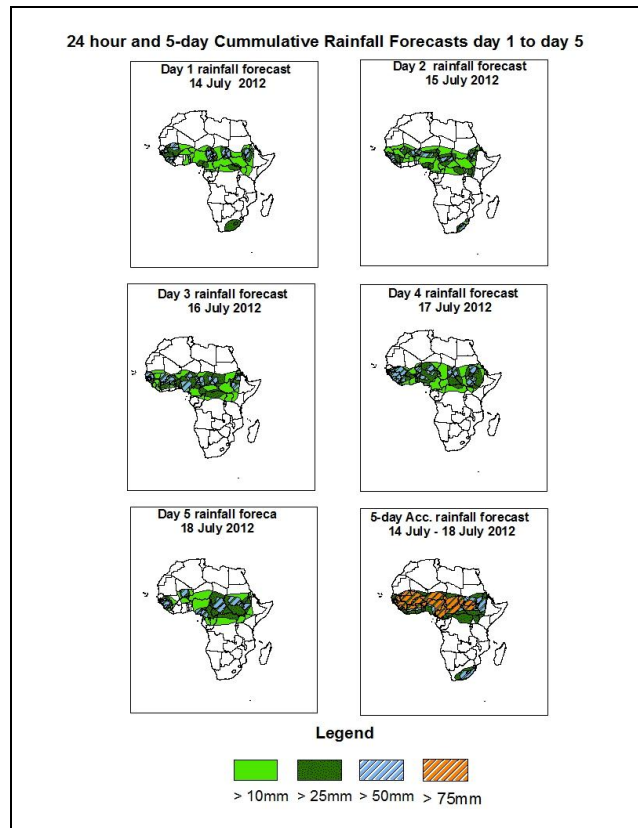


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of July, 14th – 06Z of July, 18th 2012. (Issued at 12:00Z of July, 13th 2012)

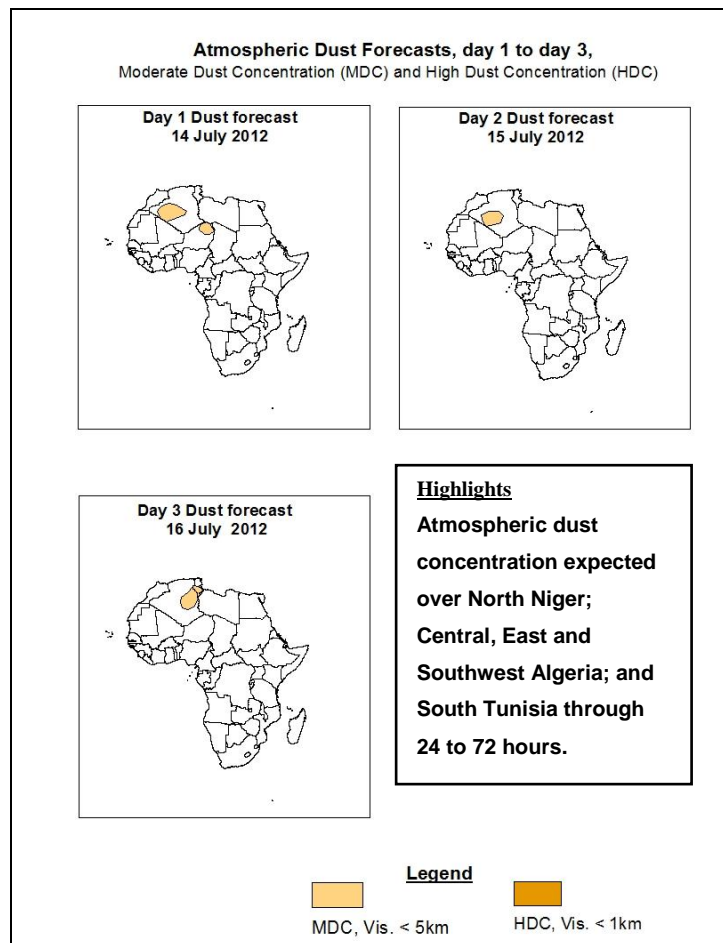
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

In the next five days, ITD is expected to fluctuate between 16°E and 22°N with moderate to strong monsoon depth within 24 to 120 hours; Also the TEJ, AEJ and the AEW propagation with 850 to 700hpa vortices are expected to enhance rainfall activities over West Sudan; East and South Chad; North and Southwest Cameroon; North and Southeast Nigeria; Portion Central and South Sahel; North and Central Guinea Gulf Countries; Part of Western Sahel, Sierra Leone and Guinea Conakry.



1.3. Model Discussion: Valid from 00Z of July, 13th 2012.

According to the GFS, ECMWF and UKMET models the heat lows are expected to deepen remain quasi-stationary, and then fill up and vice versa through 24 to 120 hours over Mauritania, Mali, Algeria, Niger, Chad and Sudan.

According to GFS model, a thermal low over West, Central and North Mauritania (1005hpa) in 24 hours is expected to increase its core value to 1006hpa in 48 hours, and tends to decrease to 1004hpa in 72 hours, then increases to 1007hpa within 96 to 120 hours. The second low over North Mali and South Algeria (1005hpa) in 24 hours is expected to decrease its core value to 1004hpa in 48 hours, and tends to increase it to 1006hpa through 72 to 96 hours, then slightly decreases it to 1005hpa in 120 hours. The third low over North Chad and Niger (1004hpa) within 24 to 48 hours is expected to gradually increase its core value from 1006hpa to 1008hpa through 72 to 96 hours, and tends to it decrease to 1004hpa in 120 hours; while the low over North Sudan

(1004hpa) in 24 hours is expected to increase its core value to 1006hpa within 48 to 72 hours and tends to decrease it from 1004hpa to 1001hpa through 96 to 120 hours.

The ECMWF model shows a thermal low over West, Central and North Mauritania (1007hpa) in 24 hours is expected to slightly decrease its core value to 1006hpa within 48 to 72 hours, and tends to increase it from 1007hpa to 1008hpa through 96 to 120 hours. The second low over North Mali and South Algeria (1007hpa) in 24 hours is expected to decrease its core value to 1005hpa in 48 hours, and tends to increase it from 1006hpa to 1008hpa within 72 to 120 hours. The third low over North Chad and Niger (1006hpa) through 24 to 48 hours is expected to increase its core value to 1008hpa within 72 to 120 hours; while the low over North Sudan (1006hpa) in 24 hours is also expected to maintain almost its core value through 48 to 120 hours.

The UKMET model shows a thermal low over West, Central and North Mauritania (1005hpa) in 24 hours is expected to slightly increase its core value to 1006hpa within 48 to 96 hours and slightly decreases to 1005hpa in 120 hours. The second low over North Mali and South Algeria (1006hpa) in 24 hours is also expected to gradually decrease its core value from 1005hpa to 1004hpa through 48 to 96 hours and tends to slightly increase to 1005hpa in 120 hours. The third low over North Chad and Niger (1005hpa) in 24 hours is expected to slightly decrease its core value to 1004hpa within 48 to 72 hours, then increases its core value to 1006hpa through 96 to 120 hours; while the low over North Sudan (1004hpa) in 24 hours is expected to maintain almost its core value within 48 to 120 hours.

According to the UKMET model, the St. Helena High pressure system over South Atlantic Ocean with a core value of 1044hpa in 24 hours locates at latitude 40°S is expected to gradually decrease from 1042hpa to 1027hpa through 48 to 120 hours by shifting northwards from latitude 35°S to 30°S.

According to the ECMWF model, the central pressure value of 1043hpa in 24 hours locates at latitude 40°S is also expected to gradually decrease from 1041hpa to 1028hpa by shifting northwards from latitude 40°S to 35°S through 48 to 96 hours and southwards from latitude 40°S to 35°S in 120 hours.

Lastly, according to the GFS model, the central pressure value of 1043hpa in 24 hours locates at latitude 40°S is expected to decrease its core value from 1042hpa to 1028hpa by shifting northwards from latitude 40°S to 35°S through 48 to 120 hours.

According to the GFS model, the Azores high pressure system over North Atlantic Ocean with its central pressure value of 1032hpa in 24 hours and locates at longitude 40°W is expected to decrease its core value to 1028hpa within 48 to 72 hours by shifting eastwards from longitude 20°W to 15°W, and tends to increase its core value to 1031hpa by moving to the east from longitude 15°W to 05°W in 96 hours and westwards from longitude 05°W to 30°W in 120 hours.

According to the ECMWF model, the central pressure value of 1032hpa in 24 hours and locates at longitude 40°W is expected to decrease its core value to 1027hpa through 48 to 72 hours by shifting eastwards from longitude 25°W to 10°W, and tends to increase its core value from 1028hpa to 1029hpa by moving to the west from longitude 20°W to 30°W within 96 to 120 hours.

Lastly, according to the UKMET model, the central pressure value of 1032hpa in 24 hours and locates at longitude 40°W is expected to decrease its core value from 1029hpa to 1028hpa through 48 to 96 hours by shifting eastwards from longitude 25°W to 20°W, and tends to increase its core value to 1031hpa by moving to the west from longitude 20°W to 30°W in 120 hours.

At 925hpa level, zone of moderate dry Northerly and Northeasterly winds (20 to 50kts) are expected to prevail over North Niger; Central, East and Southwest Algeria; and South Tunisia through 24 to 72 hours.

At the 850hpa level, a lower tropospheric wind convergence associated with significant West African Monsoon inflow and depth between latitude 14°N 20°N is expected to prevail over parts of Sudan, Cameroon, Chad, Central African Republic and Western Africa within 24 hours to 120 hours. Vortices are expected over North, Central and South Mauritania; West Mali; Guinea Conakry, Guinea Bissau; South Chad, Niger and Mali; Central and North Nigeria; Mali; North Cote d'Ivoire; South Senegal. The convergence associated with the meridional arm of the ITCZ is located over part of

South Sudan Republic; North Democratic Republic of Congo; West Uganda; East and South Central African Republic through 24 hours to 120 hours.

At 700hpa level, the African Easterly Jet (AEJ) is expected to affect South Mauritania; West Mali; North and South Senegal; The African Easterly Waves (AEW) is also expected to propagate westwards waves to affect portion of Sudan and Chad; part of Central African Republic, Sahel Region and Guinea Gulf Countries within 24 to 120 hours.

At 500hpa level, a wave is expected to affect part of Sahel Region, Central African Republic, Guinea Gulf Countries; West Sudan; East, South and West Chad; through 24 to 120 hours.

At 150mb, the Tropical Easterly Jet with a maximum core of 35 to 65 Knots will affect Southern Chad and Sudan; Part of Ethiopia, Guinea Gulf Countries and Central African Republic through 24 to 120 Hours. Easterly winds flow will also continue to affect most part of West Africa.

In the next five days, ITD is expected to fluctuate between 16°E and 22°N with moderate to strong monsoon depth within 24 to 120 hours; Also the TEJ, AEJ and the AEW propagation with 850 to 700hpa vortices are expected to enhance rainfall activities over West Sudan; East and South Chad; North and Southwest Cameroon; North and Southeast Nigeria; Portion Central and South Sahel; North and Central Guinea Gulf Countries; Part of Western Sahel, Sierra Leone and Guinea Conakry.

Atmospheric dust concentration expected over North Niger; Central, East and Southwest Algeria; and South Tunisia through 24 to 72 hours.

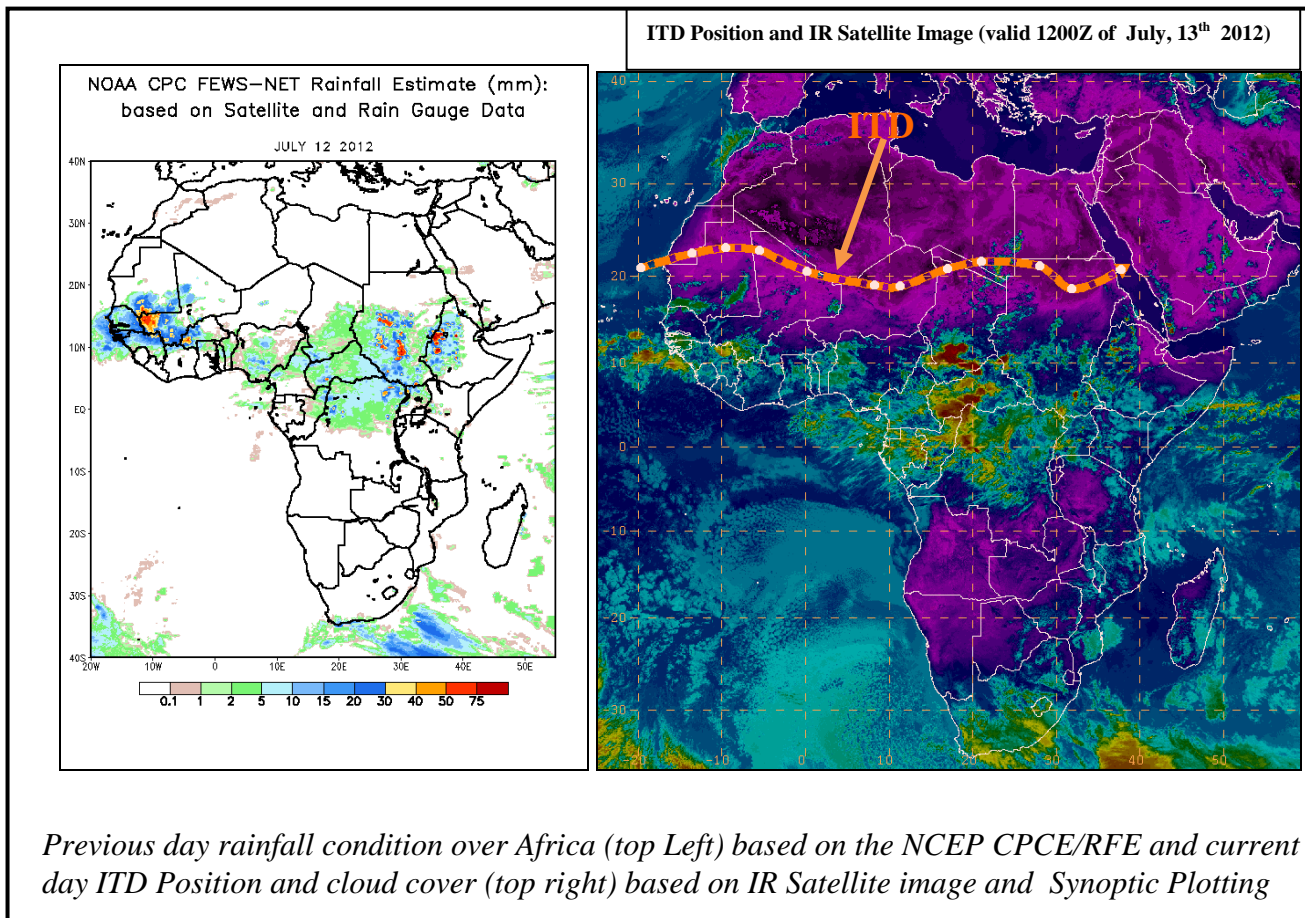
2.0. Previous and Current Day Weather Discussion over Africa (July, 12th 2012– July, 13th 2012)

2.1. Weather assessment for the previous day (July, 12th 2012)

During the previous day, moderate to heavy rainfall was observed over South Mauritania; East Senegal; West Mali; Northeast Guinea Conakry; West Burkina Faso; Central and South Nigeria; Southwest Chad; South and West Central African Republic; Northeast Cameroon; South, Central and South Sudan; South, West, Central and North South Sudan Republic; North democratic Republic of Congo and Uganda; West Ethiopia.

2.2. Weather assessment for the current day (July, 13th 2012)

Convective activities observed across Northeast Guinea Conakry; South Chad; part of Central African Republic; North Cameroon and Congo; East Gabon; South of South Sudan Republic; Northwest Ethiopia; Southwest Sudan; Northwest Democratic Republic of Congo.



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